

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/561,121  
Source: IFWP  
Date Processed by STIC: 1/3/06

***ENTERED***



IFWP

## RAW SEQUENCE LISTING

DATE: 01/03/2006

PATENT APPLICATION: US/10/561,121

TIME: 11:36:11

Input Set : F:\54-000250US.ST25.txt

Output Set: N:\CRF4\01032006\J561121.raw

3 <110> APPLICANT: The Scripps Research Institute  
 4 Deiters, Alexander  
 5 Cropp, T Ashton  
 6 Chin, Jason W  
 7 Anderson, J Christopher  
 8 Schultz, Peter G  
 10 <120> TITLE OF INVENTION: UNNATURAL REACTIVE AMINO ACID GENETIC CODE ADDITIONS  
 12 <130> FILE REFERENCE: 54-000250US/PC  
 C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/561,121  
 C--> 14 <141> CURRENT FILING DATE: 2005-12-13  
 14 <160> NUMBER OF SEQ ID NOS: 104  
 16 <170> SOFTWARE: PatentIn version 3.3  
 18 <210> SEQ ID NO: 1  
 19 <211> LENGTH: 1275  
 20 <212> TYPE: DNA  
 21 <213> ORGANISM: Escherichia coli  
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 28 gatcctaccg ctgacagctt gcatttgggg catcttggtc cattgttatg cctgaaacgc 180  
 30 ttccagcagg cgggccacaa gccggttgcg ctggttaggc gcgcgacggg tctgattggc 240  
 32 gaccgagct tcaaagctgc cgagcgtaag ctgaacaccg aagaaactgt tcaggagtgg 300  
 34 gtggacaaaa tccgtaagca ggttgccccg ttcctcgatt tcgactgtgg agaaaactct 360  
 36 gctatcgcg cgaacaacta tgactggttc ggcaatatga atgtgctgac cttcctgcgc 420  
 38 gatattggca aacacttctc cgttaaccag atgatcaaca aagaagcggg taagcagcgt 480  
 40 ctcaaccgtg aagatcaggg gatttcggtc actgagtttt cctacaacct gttgcagggt 540  
 42 tatgacttcg cctgtctgaa caaacgtagc ggtgtggtgc tgcaaattgg tggttctgac 600  
 44 cagtggggta acatcacttc tggatcgac ctgaccgctc gtctgcatca gaatcagggtg 660  
 46 tttggcctga cggttccgct gatcactaaa gcagatggca ccaaatttgg taaaactgaa 720  
 48 ggcggcgcag tctggttggg tccgaagaaa accagcccggt acaaattcta ccagttctgg 780  
 50 atcaacactg cggatgccga cgtttaccgc ttcctgaagt tcttcacctt tatgagcatt 840  
 52 gaagagatca acgccctgga agaagaagat aaaaacagcg gtaaagcacc gcgcgcccag 900  
 54 tatgtactgg cggagcaggt gactcgtctg gttcacggtg aagaaggttt acaggcggca 960  
 56 aaacgtatta ccgaatgcct gttcagcggg tctttgagtg cgctgagtga agcggacttc 1020  
 58 gaacagctgg cgcaggacgg cgtaccgatg gttgagatgg aaaagggcgc agacctgatg 1080  
 60 caggcactgg tcgattctga actgcaacct tcccgtggtc aggcacgtaa aactatcgcc 1140  
 62 tccaatgccg tcaccattaa cggtgaaaaa cagtcggatc ctgaatactt ctttaaagaa 1200  
 64 gaagategctc tgtttggctg ttttacctta ctgcgtcgcg gtaaaaagaa ttactgtctg 1260  
 66 atttgctgga aataa 1275  
 69 <210> SEQ ID NO: 2  
 70 <211> LENGTH: 424  
 71 <212> TYPE: PRT  
 72 <213> ORGANISM: Escherichia coli

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74 &lt;400&gt; SEQUENCE: 2

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76 Met Ala Ser Ser Asn Leu Ile Lys Gln Leu Gln Glu Arg Gly Leu Val
77 1      5      10      15
80 Ala Gln Val Thr Asp Glu Glu Ala Leu Ala Glu Arg Leu Ala Gln Gly
81      20      25      30
84 Pro Ile Ala Leu Tyr Cys Gly Phe Asp Pro Thr Ala Asp Ser Leu His
85      35      40      45
88 Leu Gly His Leu Val Pro Leu Leu Cys Leu Lys Arg Phe Gln Gln Ala
89      50      55      60
92 Gly His Lys Pro Val Ala Leu Val Gly Gly Ala Thr Gly Leu Ile Gly
93 65      70      75      80
96 Asp Pro Ser Phe Lys Ala Ala Glu Arg Lys Leu Asn Thr Glu Glu Thr
97      85      90      95
100 Val Gln Glu Trp Val Asp Lys Ile Arg Lys Gln Val Ala Pro Phe Leu
101      100      105      110
104 Asp Phe Asp Cys Gly Glu Asn Ser Ala Ile Ala Ala Asn Asn Tyr Asp
105      115      120      125
108 Trp Phe Gly Asn Met Asn Val Leu Thr Phe Leu Arg Asp Ile Gly Lys
109      130      135      140
112 His Phe Ser Val Asn Gln Met Ile Asn Lys Glu Ala Val Lys Gln Arg
113 145      150      155      160
116 Leu Asn Arg Glu Asp Gln Gly Ile Ser Phe Thr Glu Phe Ser Tyr Asn
117      165      170      175
120 Leu Leu Gln Gly Tyr Asp Phe Ala Cys Leu Asn Lys Gln Tyr Gly Val
121      180      185      190
124 Val Leu Gln Ile Gly Gly Ser Asp Gln Trp Gly Asn Ile Thr Ser Gly
125      195      200      205
128 Ile Asp Leu Thr Arg Arg Leu His Gln Asn Gln Val Phe Gly Leu Thr
129      210      215      220
132 Val Pro Leu Ile Thr Lys Ala Asp Gly Thr Lys Phe Gly Lys Thr Glu
133 225      230      235      240
136 Gly Gly Ala Val Trp Leu Asp Pro Lys Lys Thr Ser Pro Tyr Lys Phe
137      245      250      255
140 Tyr Gln Phe Trp Ile Asn Thr Ala Asp Ala Asp Val Tyr Arg Phe Leu
141      260      265      270
144 Lys Phe Phe Thr Phe Met Ser Ile Glu Glu Ile Asn Ala Leu Glu Glu
145      275      280      285
148 Glu Asp Lys Asn Ser Gly Lys Ala Pro Arg Ala Gln Tyr Val Leu Ala
149      290      295      300
152 Glu Gln Val Thr Arg Leu Val His Gly Glu Glu Gly Leu Gln Ala Ala
153 305      310      315      320
156 Lys Arg Ile Thr Glu Cys Leu Phe Ser Gly Ser Leu Ser Ala Leu Ser
157      325      330      335
160 Glu Ala Asp Phe Glu Gln Leu Ala Gln Asp Gly Val Pro Met Val Glu
161      340      345      350
164 Met Glu Lys Gly Ala Asp Leu Met Gln Ala Leu Val Asp Ser Glu Leu
165      355      360      365
168 Gln Pro Ser Arg Gly Gln Ala Arg Lys Thr Ile Ala Ser Asn Ala Ile
169      370      375      380

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172 Thr Ile Asn Gly Glu Lys Gln Ser Asp Pro Glu Tyr Phe Phe Lys Glu
173 385                      390                      395                      400
176 Glu Asp Arg Leu Phe Gly Arg Phe Thr Leu Leu Arg Arg Gly Lys Lys
177                      405                      410                      415
180 Asn Tyr Cys Leu Ile Cys Trp Lys
181                      420
184 <210> SEQ ID NO: 3
185 <211> LENGTH: 1275
186 <212> TYPE: DNA
187 <213> ORGANISM: Artificial
189 <220> FEATURE:
190 <223> OTHER INFORMATION: artificial synthetase
192 <400> SEQUENCE: 3
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195 gacgaggaag cgtagacaga gcgactggcg caaggcccga tcgcactcgt gtgtggcttc      120
197 gatcctaccg ctgacagctt gcatttgggg catcttggtc cattgttatg cctgaaacgc      180
199 ttccagcagg cgggccacaa gccggttgcg ctggtaggcg gcgcgacggg tctgattggc      240
201 gacccgagct tcaaagctgc cgagcgtaag ctgaacaccg aagaaactgt tcaggagtgg      300
203 gtggacaaaa tccgtaagca ggttgccccg ttctctgatt tcgactgtgg agaaaactct      360
205 gctatcgcgg ccaataatta tgactgggtc ggcaatatga atgtgctgac cttcctgcgc      420
207 gatattggca aacacttctc cgttaaccag atgatcaaca aagaagcggg taagcagcgt      480
209 ctcaaccgtg aagatcaggg gatttcgttc actgagtttt cctacaacct gctgcagggt      540
211 tatagtatgg cctgtttgaa caaacagtac ggtgtggtgc tgcaaattgg tggttctgac      600
213 cagtggggta acatcacttc tggatcgac ctgaccgcgc gtctgcatca gaatcagggt      660
215 tttggcctga ccgttccgct gatcactaaa gcagatggca ccaaatttgg taaaactgaa      720
217 ggcggcgcag tctggttgga tccgaagaaa accagcccgt acaaattcta ccagttctgg      780
219 atcaacactg cggatgccga cgtttacgcg ttctgaagt tcttcacctt tatgagcatt      840
221 gaagagatca acgcccctga agaagaagat aaaaacagcg gtaaagcacc gcgcgcccag      900
223 tatgtactgg cggagcaggg gactcgtctg gttcacgggt aagaaggttt acaggcggca      960
225 aaacgtatta ccgaatgcct gttcagcggg tctttgagtg cgctgagtga agcggacttc      1020
227 gaacagctgg cgcaggacgg cgtaccgatg gttgagatgg aaaagggcgc agacctgatg      1080
229 caggcactgg tcgattctga actgcaacct tcccgtggtc aggcacgtaa aactatcgcc      1140
231 tccaatgcc a tcaccattaa cggtgaaaaa cagtcggatc ctgaatactt ctttaaagaa      1200
233 gaagatcgtc tgtttggtcg ttttacctta ctgcgtcgcg gtaaaaagaa ttactgtctg      1260
235 atttgctgga aataa
238 <210> SEQ ID NO: 4
239 <211> LENGTH: 1275
240 <212> TYPE: DNA
241 <213> ORGANISM: artificial
243 <220> FEATURE:
244 <223> OTHER INFORMATION: artificial synthetase
246 <400> SEQUENCE: 4
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249 gacgaggaag cgtagacaga gcgactggcg caaggcccga tcgcactcac ttgtggcttc      120
251 gatcctaccg ctgacagctt gcatttgggg catcttggtc cattgttatg cctgaaacgc      180
253 ttccagcagg cgggccacaa gccggttgcg ctggtaggcg gcgcgacggg tctgattggc      240
255 gacccgagct tcaaagctgc cgagcgtaag ctgaacaccg aagaaactgt tcaggagtgg      300
257 gtggacaaaa tccgtaagca ggttgccccg ttctctgatt tcgactgtgg agaaaactct      360
259 gctatcgcgg ccaataatta tgactgggtc agcaatatga atgtgctgac cttcctgcgc      420

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261 gatattggca aacacttctc cgtaaaccag atgatcaaca aagaagcggg taagcagcgt      480
263 ctcaaccgtg aagatcaggg gatttcgttc actgagtttt cctacaacct gctgcagggg      540
265 tatacgtatg cctgtctgaa caaacagtac ggtgtggtgc tgcaaattgg tggttctgac      600
267 cagtggggta acatcacttc tggatcgcac ctgaccgcgc gtctgcatca gaatcaggtg      660
269 tttggcctga ccgttcgcgt gatcactaaa gcagatggca ccaaatttgg taaaactgaa      720
271 ggcggcgcag tctggttgga tccgaagaaa accagcccggt acaaattcta ccagttctgg      780
273 atcaacactg cggatgccga cgtttaccgc ttctgaagt tcttcacctt tatgagcatt      840
275 gaagagatca acgcccctgga agaagaagat aaaaacagcg gtaaagcacc gcgcgcccag      900
277 tatgtactgg cggagcaggt gactcgtctg gttcacgggt aagaagggtt acaggcggca      960
279 aaacgtatta ccgaatgcct gttcagcggg tctttgagtg cgctgagtga agcggacttc     1020
281 gaacagctgg cgcaggacgg cgtaccgatg gttgagatgg aaaagggcgc agacctgatg     1080
283 caggcactgg tcgattctga actgcaacct tcccgtgggc aggcacgtaa aactatcgcc     1140
285 tccaatgcc aaccatttaa cggtgaaaaa cagtccgac ctgaatactt ctttaaagaa     1200
287 gaagatcgtc tgtttggtcg ttttacctta ctgcgtcgcg gtaaaaagaa ttactgtctg     1260
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293 <211> LENGTH: 1275
294 <212> TYPE: DNA
295 <213> ORGANISM: artificial
297 <220> FEATURE:
298 <223> OTHER INFORMATION: artificial synthetase
300 <400> SEQUENCE: 5
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303 gacgaggaag cgtagcaga gcgactggcg caaggcccgga tcgcactcgt gtgtggcttc     120
305 gatcctaccg ctgacagctt gcatttgggg catcttggtc cattgttatg cctgaaacgc     180
307 ttccagcagg cgggccacaa gccggttgcg ctggtaggcg gcgcgacggg tctgattggc     240
309 gacccgagct tcaaagctgc cgagcgtaag ctgaacaccc aagaaactgt tcaggagtgg     300
311 gtggacaaaa tccgtaagca gggtgccccg ttctctgatt tcgactgtgg agaaaactct     360
313 gctatcgcgg ccaataatta tgactgggtc ggcaatatga atgtgctgac cttcctgcgc     420
315 gatattggca aacacttctc cgtaaaccag atgatcaaca aagaagcggg taagcagcgt     480
317 ctcaaccgtg aagatcaggg gatttcgttc actgagtttt cctacaacct gctgcagggg     540
319 tatagtatgg cctggttgaa caaacagtac ggtgtggtgc tgcaaattgg tggttctgac     600
321 cagtggggta acatcacttc tggatcgcac ctgaccgcgc gtctgcatca gaatcaggtg     660
323 tttggcctga ccgttcgcgt gatcactaaa gcagatggca ccaaatttgg taaaactgaa     720
325 ggcggcgcag tctggttgga tccgaagaaa accagcccggt acaaattcta ccagttctgg     780
327 atcaacactg cggatgccga cgtttaccgc ttctgaagt tcttcacctt tatgagcatt     840
329 gaagagatca acgcccctgga agaagaagat aaaaacagcg gtaaagcacc gcgcgcccag     900
331 tatgtactgg cggagcaggt gactcgtctg gttcacgggt aagaagggtt acaggcggca     960
333 aaacgtatta ccgaatgcct gttcagcggg tctttgagtg cgctgagtga agcggacttc     1020
335 gaacagctgg cgcaggacgg cgtaccgatg gttgagatgg aaaagggcgc agacctgatg     1080
337 caggcactgg tcgattctga actgcaacct tcccgtgggc aggcacgtaa aactatcgcc     1140
339 tccaatgcc aaccatttaa cggtgaaaaa cagtccgac ctgaatactt ctttaaagaa     1200
341 gaagatcgtc tgtttggtcg ttttacctta ctgcgtcgcg gtaaaaagaa ttactgtctg     1260
343 atttgctgga aataa                                     1275
346 <210> SEQ ID NO: 6
347 <211> LENGTH: 1275
348 <212> TYPE: DNA
349 <213> ORGANISM: artificial
351 <220> FEATURE:

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352 &lt;223&gt; OTHER INFORMATION: artificial synthetase

354 &lt;400&gt; SEQUENCE: 6

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357	gacgaggaag	cgtagcaga	gcgactggcg	caaggcccg	tcgcactcgt	gtgtggcttc	120
359	gacccctaccg	ctgacagctt	gcatttgggg	catcttggtc	cattgttatg	cctgaaacgc	180
361	ttccagcagg	cgggccacaa	gccggttgcg	ctggtaggcg	gcgcgacggg	tctgattggc	240
363	gacccgagct	tcaaagctgc	cgagcgtaag	ctgaacaccg	aagaaactgt	tcaggagtgg	300
365	gtggacaaaa	tccgtaagca	ggttgccccg	ttcctcgatt	tcgactgtgg	agaaaactct	360
367	gctatcgcg	ccaataatta	tgactgggtc	ggcaatatga	atgtgctgac	cttcctgcgc	420
369	gatattggca	aacactttct	cgtaaccag	atgatcaaca	aagaagcgg	taagcagcgt	480
371	ctcaaccgtg	aagatcagg	gatttcgttc	actgagtttt	cctacaacct	gctgcagggt	540
373	tatagtattg	cctgtttgaa	caaacagtac	gggtgtggtg	tgcaaattgg	tggttctgac	600
375	cagtggggta	acatcacttc	tggtatcgac	ctgaccgcgc	gtctgcatca	gaatcagggt	660
377	tttggcctga	ccgttcgcgt	gatcactaaa	gcagatggca	ccaaatttgg	taaaactgaa	720
379	ggcggcgag	tctggttga	tccgaagaaa	accagcccg	acaaattcta	ccagttctgg	780
381	atcaacactg	cggatgccga	cgtttaccgc	ttcctgaagt	tcttcacctt	tatgagcatt	840
383	gaagagatca	acgccttgg	agaagaagat	aaaaacagcg	gtaaagcacc	gcgcgcccag	900
385	tatgtactgg	cggagcaggt	gactcgtctg	gttcacgggt	aagaagggtt	acaggcggca	960
387	aaacgtatta	ccgaatgcct	gttcagcgg	tctttgagtg	cgctgagtga	agcggacttc	1020
389	gaacagctgg	cgcaggacgg	cgtaccgatg	gttgagatgg	aaaagggcgc	agacctgatg	1080
391	caggcactgg	tcgattctga	actgcaacct	tcccgtagtc	aggcacgtaa	aactatcgcc	1140
393	tccaatgcc	tcaccattaa	cggtgaaaaa	cagtccgatc	ctgaataact	ctttaagaaa	1200
395	gaagatcgtc	tgtttggtcg	ttttacctta	ctgcgtcgcg	gtaaaaagaa	ttactgtctg	1260
397	atttgctgga	aataa					1275

400 &lt;210&gt; SEQ ID NO: 7

401 &lt;211&gt; LENGTH: 1275

402 &lt;212&gt; TYPE: DNA

403 &lt;213&gt; ORGANISM: artificial

405 &lt;220&gt; FEATURE: -

406 &lt;223&gt; OTHER INFORMATION: artificial synthetase

408 &lt;400&gt; SEQUENCE: 7

409	atggcaagca	gtaacttgat	taaacaattg	caagagcggg	ggctggtagc	ccaggtgacg	60
411	gacgaggaag	cgtagcaga	gcgactggcg	caaggcccg	tcgcactcac	gtgtggcttc	120
413	gacccctaccg	ctgacagctt	gcatttgggg	catcttggtc	cattgttatg	cctgaaacgc	180
415	ttccagcagg	cgggccacaa	gccggttgcg	ctggtaggcg	gcgcgacggg	tctgattggc	240
417	gacccgagct	tcaaagctgc	cgagcgtaag	ctgaacaccg	aagaaactgt	tcaggagtgg	300
419	gtggacaaaa	tccgtaagca	ggttgccccg	ttcctcgatt	tcgactgtgg	agaaaactct	360
421	gctatcgcg	ccaataatta	tgactgggtc	ggcaatatga	atgtgctgac	cttcctgcgc	420
423	gatattggca	aacactttct	cgtaaccag	atgatcaaca	aagaagcgg	taagcagcgt	480
425	ctcaaccgtg	aagatcagg	gatttcgttc	actgagtttt	cctacagcct	gctgcagggt	540
427	tatacgatgg	cctgtctgaa	caaacagtac	gggtgtggtg	tgcaaattgg	tggttctgac	600
429	cagtggggta	acatcacttc	tggtatcgac	ctgaccgcgc	gtctgcatca	gaatcagggt	660
431	tttggcctga	ccgttcgcgt	gatcactaaa	gcagatggca	ccaaatttgg	taaaactgaa	720
433	ggcggcgag	tctggttga	tccgaagaaa	accagcccg	acaaattcta	ccagttctgg	780
435	atcaacactg	cggatgccga	cgtttaccgc	ttcctgaagt	tcttcacctt	tatgagcatt	840
437	gaagagatca	acgccttgg	agaagaagat	aaaaacagcg	gtaaagcacc	gcgcgcccag	900
439	tatgtactgg	cggagcaggt	gactcgtctg	gttcacgggt	aagaagggtt	acaggcggca	960
441	aaacgtatta	ccgaatgcct	gttcagcgg	tctttgagtg	cgctgagtga	agcggacttc	1020
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RAW SEQUENCE LISTING ERROR SUMMARY  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:20; N Pos. 26,612,618  
Seq#:22; N Pos. 403,513,515,518,531  
Seq#:23; N Pos. 588  
Seq#:26; N Pos. 13,599  
Seq#:27; N Pos. 600  
Seq#:34; N Pos. 13  
Seq#:87; Xaa Pos. 2  
Seq#:88; N Pos. 8  
Seq#:91; N Pos. 1,14

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29  
Seq#:30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53  
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Seq#:103,104

## VERIFICATION SUMMARY

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Input Set : F:\54-000250US.ST25.txt

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L:14 M:270 C: Current Application Number differs, Replaced Current Application No  
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:825 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0  
L:845 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:600  
L:925 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:360  
L:929 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:480  
L:967 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:540  
L:1050 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0  
L:1068 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:540  
L:1106 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:540  
L:1318 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0  
L:5080 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:87 after pos.:0  
L:5099 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:88 after pos.:0  
L:5150 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:91 after pos.:0